

Exhibit 13

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BOEING AND SPIRIT GRAPPLE WITH NEWLY DISCOVERED 737 MAX QUALITY ISSUE

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*HUNDREDS OF MISDRILLED HOLES
ON THE AFT PRESSURE BULKHEAD
ADD TO BOEING AND SPIRIT'S
MANUFACTURING CHALLENGES.*

Boeing has identified a potentially widespread manufacturing quality issue on the 737 Max stemming from structural assembly work on the jet's aft pressure bulkhead conducted by supplier Spirit AeroSystems, according to two people familiar with the issue.

Boeing confirmed the issue and said it has now completed its technical analysis of the problem. "We understand the issue and required fix," the company told *The Air Current*, emphasizing that it does not consider the issue to be an immediate threat to the safety of flight for the in-service fleet.

However, the company is at a minimum planning for near-term delivery delays for some 737 Max aircraft, making the latest

quality issue another in an extended string of headaches that the plane maker and its most important supplier have endured as they work to find a stable production tempo.

The issue, which was discovered by Boeing within the last month, has not been previously reported. The prospect of widespread misdrilled holes on a particularly sensitive part of the 737's structure rekindles questions around Boeing and Spirit's relationship and the

pair's ability to meet the coming production ramp up plans, especially after decades of doing the same work for thousands of aircraft.

Boeing has inspected multiple fuselages and found some aircraft with hundreds of misaligned and duplicated holes. These holes, called "snowmen" because of their elongated shape of two overlapping holes of differing size, were filled with fasteners and passed quality inspections at Spirit before being shipped by rail to Boeing.

Boeing cannot deliver an airplane with a known issue that doesn't match its manufacturing specifications, and Boeing stopped granting certificates of airworthiness last week for the Max 8s and 8200s that will require inspections, according to one of the people familiar with the issue. Improperly drilled holes can reduce the static carrying strength of the structure as well as its long-term ability to withstand the repeated forces on aircraft during service. The aft pressure bulkhead, as its name suggests, caps the pressurized cabin and cargo hold at the rear of the aircraft.

It is not fully clear how widespread this latest manufacturing quality issue is, though it has so far been discovered on at least five

737 Max 8 and P-8A Poseidon fuselages in Boeing and Spirit's possession, according to one of the people familiar with the issue. However, the number of affected Max 8 and P-8A airplanes is expected to be far higher than the initial count.

"During factory inspections, we identified fastener holes that did not conform to our specifications in the aft pressure bulkhead on certain 737 airplanes," said Boeing in a statement to *The Air Current*. "This is not an immediate safety of flight issue for the 737 fleet, which can continue operating safely. This issue will impact near-term 737 deliveries as we conduct inspections to determine the number of airplanes affected, and complete required rework on those airplanes. We continue to deliver 737s that are not affected. We have notified the FAA and our customers, and we will keep them informed as we work through the issue with our supplier."

Spirit noted that because it uses multiple suppliers for the aft pressure bulkhead, only some units are affected. "Spirit will continue to deliver units to Boeing," the company told *TAC*. "Spirit has implemented changes to its manufacturing process to address this issue. We are working closely with our customer to address any impacted units within the production system and address any needed rework. Based upon what we know now, we believe there will not be a material impact to our delivery range for the year related to this issue."

An FAA spokesperson told *TAC*: "We are aware of the issue and are working it through our regular oversight process. There is no immediate safety concern."

While Boeing and the FAA agree that the issue is not a near-term threat to safety, the prospect of misassembled aft pressure bulkheads revisits a tragic chapter in Boeing's history when Japan Airlines 123, a 747SR (designed for short range flying) suffered an in-flight structural failure and decompression and crashed in August 1985, killing 520 of the 524 passengers and crew aboard. It remains the worst single-aircraft air disaster in aviation history and was traced to an improper repair conducted by Boeing on the jet's aft pressure bulkhead after the jumbo suffered a tail strike seven years earlier.

The internal inquiry into the aft pressure bulkhead drilling issue has been ongoing at both companies over the last several weeks, according to a knowledgeable person. The problem was discovered in the last month at Boeing and follows the springtime fallout of Spirit's internal inquest into required inspections and modifications on dozens of vertical tail plane fittings¹ at Boeing and its biggest supplier.

Boeing said that it is taking "proactive steps" at Spirit and at its upstream suppliers to make sure "no additional non-conforming parts are delivered."

During recent inspections, teams at Boeing, in some instances, found visible gaps around rivet heads that prompted removal along with the discovery of the numerous misdrilled holes that led to the deeper study and analysis at Spirit. As Boeing and Spirit intensified their inspections, they discovered many of the misdrilled holes were not visible

¹ Those improperly installed fittings, which were originally discovered by Spirit in Wichita, only affected the 737 Max 8, 8200, Max 7 and 737-800 derived P-8A because of the curved pressure bulkhead that only exists on those models. Boeing adopted a flat aft pressure bulkhead on the 737-900ER to reshape the galley and add more capacity. That design was carried through to the Max 9 and Max 10, avoiding the earlier fitting issue and the aft pressure bulkhead issue on the smaller 737 Max models.

to the naked eye and only apparent through non-destructive inspection.

The Air Current understands that these holes, of which there are roughly 4,000 on the bulkhead, are drilled with an auto-fastener machine that is manually driven by an operator. Two other suppliers, in addition to Spirit, provide the bulkheads for installation in 737 fuselages. Spirit's drilled Max 8 bulkheads, and its process which differs from that of the two other suppliers, are the only ones under scrutiny, allowing Boeing to continue delivering other non-affected Max 8s and 9s to customers.

Boeing and Spirit are still trying to understand the full scope of the issue across their respective factories currently building parts for 38 737s each month. *TAC* understands that airplanes in Boeing and Spirit's possession may have approximately 300 misdrilled holes, though those familiar with the issue note that some are higher and some are lower.

Boeing has already begun x-ray inspections inside the factory, which are relatively straightforward for aircraft early in the manufacturing process. Access is through a hatch behind and below the rear bulkhead, however, one of the people knowledgeable about the issue said that once items like galleys and lavatories are installed on the opposite side, it makes repair and modification considerably more difficult.

Managing the risk

To be sure, quality "escapes" as the aerospace industry calls them, and the resulting analyses and fixes are a normal part of manufacturing. Yet, the latest quality lapse adds to Boeing's challenges in managing risk within the key aerospace node that connects Wichita, where Spirit builds the fuselage of each 737, and Renton, where Boeing does final assembly.

In the spring, Boeing was forced to delay 40 to 50 summertime deliveries after it was discovered that Spirit had been installing fittings incorrectly, prompting time consuming inspections at both factories. Spirit reported on August 2 that it resolved the required rework on available units in Wichita within a previous \$31 million cost estimate. However, it also recorded a \$23 million contra revenue charge in its second quarter to account for a potential claim from Boeing related to repair work to date at its facility, which Spirit said represents about half the units affected.

Earlier in the summer, Spirit's workforce of unionized machinists went out on strike for six days, largely shutting down production at the company's Wichita base. Days after they returned, a Montana bridge collapsed during a train derailment, severing the rail link that moved the same suspect 737 fuselages and 777 subassemblies by rail to Washington state.

Boeing, rather creatively, was forced to reroute shipments of fuselages by removing the fixtures from rail cars and trucking them by road several miles before cranes reloaded the fixtures onto waiting rail cars to travel the last leg to Renton. The rebuilt bridge reopened four weeks after it collapsed, but the company had to move 18 fuselages with its logistical somersault to maintain its delivery schedule.

The issue comes at a time when Boeing has been stabilizing its operations and seeking to move into less turbulent output. Boeing recently restarted production of wings for 777X aircraft after an 18-month pause and has been advancing progress on its certification timelines for the 737 Max 7 and 10. It's also reportedly on the verge of possible widebody commitments from Qantas and IndiGo.

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